

# A new species of *Calandrinia* (Portulacaceae) from Northern Territory, Australia.

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A new species of *Calandrinia* Humb., Bonpl and Kunth (Portulacaceae) from Northern Territory Australia is described, and compared with other closely related species. Distribution map, scanning electron micrographs of pollen and seed are provided.

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KEYWORDS: *Calandrinia oblonga* sp. nov., Northern Territory Australia, Portulacaceae.

## INTRODUCTION

The genus *Calandrinia* (Portulacaceae) is confined to Australia and Western America. The genus contains about 100 species with approximately 34 endemic to Australia. *Calandrinia* is defined morphologically by having two persistent sepals and a many-seeded, usually 3-valved, or sometimes 4 to 6-valved, capsule. The first complete monograph of the Australian species was by Bentham (1863) in which he described 20 species. Von Peollnitz (1934) reviewed the Australian species of *Calandrinia*, and he described 3 new species and recognized 8 sections in his taxonomic treatment.

The senior author, while reviewing the Australian *Calandrinia*, examined all the available herbarium collections of this genus which are held in Australian herbaria and in some American and European herbaria (for detail see acknowledgements), including type specimens.

There are many studies on Australian *Calandrinia*: Syeda (1979), Syeda and Carolin (1988) and Syeda and Ashton (1989, 1990, 1996) have determined cladistic relationships among the species of *Calandrinia* and provided detailed information on variation and correlations in seed and pollen characters.

## TAXONOMY

*Calandrinia oblonga* Syeda Saleha Tahir and Roger C. Carolin. sp.nov.

Herba carnosae decumbens scapis 25-40 cm longis. Folia basalia linearia. Flores pedicellis patulis. Petala 6 oblanceolata. Stamina plus quam 20. Stigmata 4 linearia libera usque ad basin. Capsula late ovata valves 4 usque ad basin dehiscens. Semina pauca, vel raro unum oblonga nigra laevia impolita ca 1.5 mm longa.

### Holotype

Northern territory, Delissaville, Cox's Peninsula R.L.. Specht 103, 27-3-1948 (AD 96148219).

### Isotype

(BRI 1018021)

The specific epithet refers to the shape of the seed.

Fleshy decumbent herb with a very short stem. Scapes numerous, branched, 25-40 cm long. Leaves basal, few, linear, sessile, acute, 9-13 cm long, 1.5-1.7 mm broad. Flowers arranged in loose monochasia;

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pedicel spreading at fruiting stage, 5-31 mm long; bracts alternate, scarious, subulate or acuminate, 0.75-1.50 mm long, ca 0.5 mm broad.

Sepals ovate, acuminate, 2.1-2.8 mm long, 1.4-1.8 mm broad. Petals 6, pink, oblanceolate, 2.5-4.7 mm long, 0.75-1.40 mm broad. Stamens more than 20; filaments connate at the base forming a ring around the ovary, 0.5-3.5 mm long; anther oblong, versatile, 0.5-0.7 mm long, 0.3-0.4 mm broad. Ovary globular, thick, 0.75-1.10 mm long; stigmata 4, free to the base, linear, 0.7-0.9 mm long; ovules 5-6, oblong, 0.4-0.5 mm long, 0.2-0.3 mm broad. Fruit a capsule, broad-ovate, as long as sepals, 4-valved to the base. Seeds few or rarely 1, oblong, black, dull, rough, smooth or with slight pattern, 1.4-1.5 mm long, 0.9-1.0 mm broad.

### Habitat

On sandy soil in *Eucalyptus tetrodonta* open forest in Arnhem Land, Northern Territory, Australia (Fig. 1A).

### POLLEN MORPHOLOGY

(Fig. 1 D,E)

Pollen grain spherical in shape, circular in outline, 33.0-34.6 µm diameter, 25 or more panto colpate, operculate. Colpi short, elliptical, ca. 5.7 µm long and 2.6 µm broad. Operculum protruding, elliptical with a few small sparsely to irregularly distributed spinules; the spinules variable in diameter. Sexine tectate, ca 2.4 µm thick in the centre of mesocolpium and gradually thinner towards the aperture. Tectum granulate to spinulose, punctate; granules small and broad, irregularly to densely spaced, mostly collapsed, variable in size, spinules small few, arranged mostly towards and around the apertures. Punctae very few but distinct, sparsely spaced, unequal in size. Bacula indistinct. Nexine ca 1.6 µm thick. Voucher specimen, Craven 6645 (CANB).

### SEED MORPHOLOGY

(Fig. 1 B,C)

Seeds black, oblong, dull, rough, surface pattern smooth-colliculate, few in each capsule, 1.4-1.5 mm long, 0.9-1.0 mm broad. Voucher specimen. Northern territory Delissaville, Cox's Peninsula, R.L. Specht 103, 27-3-1948. (AD 96148219).

### DISCUSSION

This new species is placed in sect. Basales which was recognized by Von Poellnitz (1934) and Syeda (1996, 1979). The main attributes which delimit this section from other section are: 4 stigmatic branches free to the base on a 4-valved capsule mostly opening by terminal valves. This new species has quite different seeds which are oblong with very dull and rough, smooth or slight patterned surface. These types of seed have not yet been found in any other species of *Calandrinia*, however, it is close to *C. quadrivalvis* but can be easily separated from that species by its seeds which are black, much larger in size and with rough to smooth surface.

Keeping in view that *Calandrinia* is a complicated genus with features of significance that are difficult to assess in the herbarium material, the following key is provided to distinguish closely related species.

### KEY TO THE RELATED TAXA

1. Ovules 5-6 in each locule; seeds oblong with dull surface. Pollen grains with few tectal punctae, spinules crowded and many collapsed.....*C. oblonga*  
- Ovules more than 6 in each locule; seeds obovoid with glossy surface. Pollen grains with numerous tectal punctae; spinules spreading and not collapsed. .... (2)
2. Leaves with papillae on the upper surface, Petal 6; Pollen grains panto colpate .....*C. quadrivalvis*  
-- Leaves without papillae on the upper surface. Petal 8; Pollen grains pantoporate .....*C. pleiopetala*.

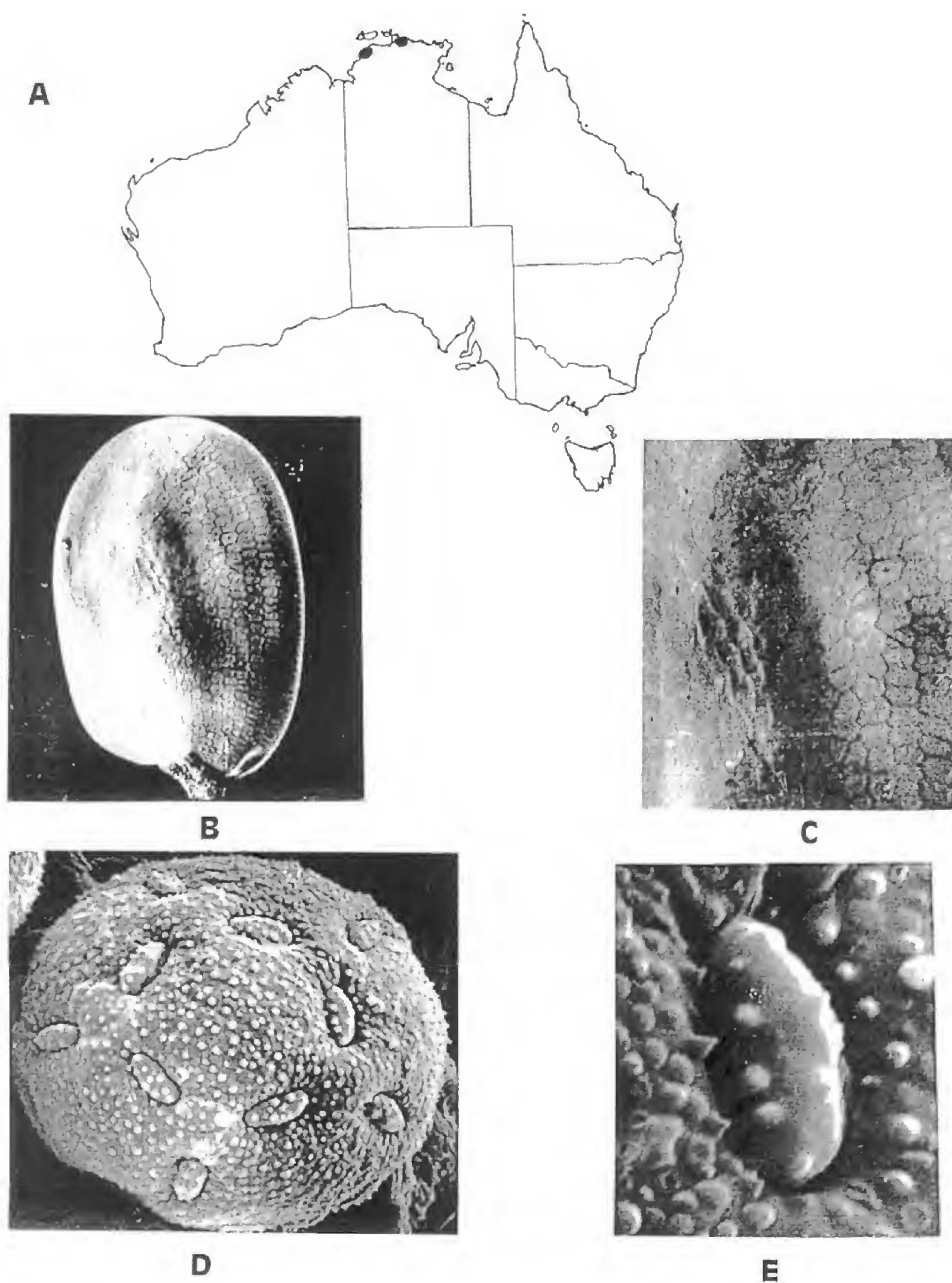
### specimens examined

Delissaville, Cox's Pen, R.L. Specht 103, 27-03-148 (AD 96148219 and BRI 053299); East Alligator River, C. Dunlop 3260, 16-2-1973 (NT 42007).

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**Fig. 1. A. map showing the distribution of *C. oblonga* Sp. Nov. B. Seed (x45) C. Seed surface pattern (x100) D. Pollen grain (x2600) E. Pollen surface (x5300).**

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